# MINUTES OF THE 7th MEETING OF TECHNICAL COMMITTEE OF NATIONAL MINERAL EXPLORATION TRUST (NMET) HELD AT GSI, TRAINING INSTITUTE, HYDERABAD ON 14th & 15th DECEMBER, 2016

The 7th Meeting of Technical Committee of National Mineral Exploration Trust (NMET) was held at GSI, Training Institute, Hyderabad on 14-12-2016 & 15-12-2016 under the Chairmanship of Dr P. R. Golani, Dy. Director General, GSI Training Institute for technical appraisal of eleven (10) new proposals submitted by MECL, CMPDIL & NLC, and review of two (2) ongoing proposals under NMET funding. The details of the review are as follows:

**A- Mineral Exploration Corporation Limited (MECL), Nagpur, Maharashtra:**

Shri B. P. Raturi, Dy. General Manager (Exploration), MECL presented 09 (nine) proposals for discussion in the meeting-

**1- Proposal for Regional Exploration (G-4 level) for Copper, Gold & Molybdenum in Karoli-Nathdwara, (Block ID-WR-RAJ-9), in an area of 148 Sq. Km., District: Udaipur & Rajsamand, (Rajasthan).**

The committee discussed the proposal in detail and agreed to the proposal with the following technical modifications. (Quantum of Work Table is Annexed )

a) NGCM data of GSI to be consulted and samples (unit cell samples) will be collected judiciously only from the area where anomalous values are observed in GSI data.
b) HZL & DGM, Rajasthan reports to be consulted.
c) Geophysical work- Resistivity & IP will be 60 line Km
d) Stream sediments not required
e) Pitting & Trenching of about 150 cu. m. is to be carried out in the potential zone areas

The committee decided that review of data generated shall be done after completion of Geological Mapping and Geochemical sampling work.

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**2. Regional Exploration Proposal (G-4 level) for Base metals in Iswal-Selu-Kathar-Tula (Thala) (Block ID RAJ-14), in an area of 95 Sq. Km., District: Udaipur, Rajsamand, (Rajasthan)**

The committee discussed the proposal in detail and agreed to the proposal with the following modifications (Quantum of Work Table is Annexed).

a) Geophysical survey to be carried out in the extension area of already surveyed Kathar and adjoining areas.
b) NGCM data of GSI to be consulted and samples (unit cell samples) will be collected judiciously from the area where anomalous values are observed in GSI data.
c) Geophysical work- Resistivity & IP will be 60 line Km and gravity survey to be included.
d) Pitting & Trenching of about 100 cu. m. is to be carried out in the potential zone areas
e) Integration of geophysical signatures recorded in earlier works and observed mineralization is to be examined.

**The committee decided that review of data generated shall be done after completion of Geological Mapping and Geochemical sampling work.**

3. **Proposal for Regional Exploration (G-4 level) for Base metals & Gold in Vasu-Jagat-Kharwach & Saran-Bharwawat (Block ID-WR-RAJ-21), in an area of 124 Sq. Km. District: Udaipur, (Rajasthan).**

The committee discussed the proposal in detail and agreed to the proposal with the following modifications (Quantum of Work Table is Annexed).

a) Soil samples 150 nos., bed rock samples 100 nos. and stream sediment samples 50 nos. to be collected.
b) Geophysical survey will be carried out after interpretation of Aero-geophysical survey data and geological mapping.
c) Analysis for barite to be carried out from the collected samples.
d) Pitting and trenching 100 cu. m. wherever required.
e) Geological Mapping to be extended to the north-western corner to cover the nearby formational litho-contacts.
f) In view of the lesser exposure level, Remote Sensing studies to be carried out.

**The committee decided that review of data generated shall be done after completion of Geological Mapping and Geochemical sampling work.**

4. **Regional Exploration Proposal (G-4 level) for Fe, Ni, Cr, PGE & Au in Dhanoli Bazar Block, (Block ID: CR-MH-02) in an area of 160 Sq. Km., District: Sindhudurg, (Maharashtra).**

The committee discussed the proposal in detail and agreed to the proposal with the following modifications (Quantum of Work Table is Annexed).

a) Geophysical survey will be carried out on geologically mapped serpentinized and contiguous areas with no change in quantum of work.
b) Pitting and trenching 100 cu. m. wherever required.
c) Integration of all available geophysical and subsurface (borehole) to be integrated with geological map.
d) NGCM data of GSI to be consulted before geochemical work.
e) Soil samples- 50 nos.

**The committee decided that review of data generated shall be done after completion of Geological Mapping and Geochemical sampling work.**

5. **Proposal for Regional Exploration (G-4 level) for Ba, Au, Pb, Cu, W, in Aurala-Sawali Block, (Block ID-CR-MH-03) in an area of 100 Sq. Km., District: Nanded, (Maharashtra).**

The committee discussed the proposal in detail and agreed to the proposal with the following modifications (Quantum of Work Table is Annexed).

a) Geophysical work to be carried out after completion of geological mapping.
b) Geochemical sampling to be confined to Precambrian terrain.
c) Pitting and trenching – 100 cu. m.

**The committee decided that review of data generated shall be done after completion of Geological Mapping and Geochemical sampling work.**

6. **Proposal for Regional Exploration (G-4 level) for PGE mineralization in Pathri-Saoli Area (Block ID-CR-MH-04) in an area of 100 Sq. Km., District: Chandrapur, (Maharashtra).**

The committee discussed the proposal in detail and agreed to the proposal with the following modifications (Quantum of Work Table is Annexed).

a) Geophysical work, Gravity, Magnetic, IP & Resistivity (20 line km each) to be carried out on basic and ultrabasic rocks after completion of geological mapping.
b) Soil and bed rock samples- 50 nos. each.
c) Stream sediments samples not required.
d) Pitting and trenching – 100 cu. m. wherever necessary.

**The committee decided that review of data generated shall be done after completion of Geological Mapping and Geochemical sampling work.**

7. **Regional Exploration Proposal (G-4 level) for Gold and Base metals in Bachkakocha and Tankocha area (Block-ID ER-JH-06), District: Saraikela-Kharsawan, (Jharkhand).**

The committee discussed the proposal in detail and agreed to the proposal with the following modifications (Quantum of Work Table is Annexed).

a) Geophysical work, to be carried out in anomalous areas in detail after geological mapping.
b) Soil and bed rock samples to be carried out in anomalous areas.
c) Stream sediments sampling 50 nos.
d) Pitting and trenching – 100 cu. m.
e) Available NGCM & NGPM data may be incorporated.

**The committee decided that review of data generated shall be done after completion of Geological Mapping and Geochemical sampling work.**

8. **Regional Exploration Proposal (G-4 level) for Mn, phosphorite and graphite in Udwara area (Block-ID CR-MP-01), in an area of 225 sq. km District: Alirajpur, (Madhya Pradesh).**

The committee discussed the proposal in detail and agreed to the proposal with the following modifications (Quantum of Work Table is Annexed).

a) Geophysical work, SP component to be added in the work component.
b) Geological Mapping to be carried out on 1:12500 Scale.
c) Geophysical work, to be carried out in anomalous areas in detail after geological mapping.
d) Soil and bed rock samples to be carried out in anomalous areas.
e) Pitting and trenching – 200 cu. m.
f) Available NGCM & NGPM data may be incorporated.

**The committee decided that review of data generated shall be done after completion of Geological Mapping and Geochemical sampling work.**

9. **Regional Exploration Proposal (G-4 level) for Au, Cu, Pb, Zn, Ni and Co in Ranibennur Block (Block-ID SR-KAR-08), in an area of 463 sq. km District: Haveri & Davanagere, (Karnataka).**

The committee discussed the proposal in detail and agreed to the proposal with the following modifications (Quantum of Work Table is Annexed).

a) Remote Sensing and Reconnaissance Survey at suitable scale to be carried out to identify the potential areas and for deciding further work component will be decided.
b) Geochemical sampling (Bed rock, soil and stream sediments samples at places where NGCM data not available) will be carried out in the anomalous area.

c) Geological Mapping to be carried out on 1:12,500 Scale.

d) Topographic survey of Potential zone area has to be carried out.

e) Heliborne Survey not required as Aero-geophysical Survey data is available the data.

**Review of Ongoing Projects**

**1- Jhumka- Pathiriposhi Block for Iron Ore, District- Sundargarh, Odisha**

MECL informed that, the RC drilling is not feasible in some parts of the area in the block due to topographic constraints and core drilling is suggested for logical conclusion of the investigation.

The technical committee suggested that attempt should be made to complete the RC drilling. The Block will be reviewed in next meeting for further decision.

2. The Geological report of Nahardih- Madhaipur, Limestone Block, District -Raipur the block submitted to chairman of the committee. Decision of further exploration will be taken after study of the report next meeting.

**B- CMPDIL, Ranchi**

Shri R.P. Singh, Dy Manager (Geology), CMPDIL, Ranchi presented the proposal of Nonbirra Coal Block Korba Coalfield discussed in the 6th meeting. The modifications suggested by the technical committee were attended in revised proposal.

As per the suggestion of the technical committee in the 6th meeting regarding the overlapping area of Nonbirra block with Dhengurdih-Kachanadi, regionally explored by GSI, the overlap area was excluded from Nonbirra block. Proposed borehole number P-29, P-30, P-55, P-56 & P-76 were excluded from the block. The committee recommended the block for exploration with 84 boreholes with about 30700m in 59 sq. Km area, in including Geophysical survey and CBM studies in Nonbirra block. The committee also recommended for review of the proposed drilling meterage after completing initial 7 boreholes covering full sedimentary sequence upto Talchir in Nonbirra Block.

**C- NLC, Neyveli, TamilNadu**

Shri P. Bhuvarahamurthy, Chief Manager (Geology) Presented the proposal of Palayamkottai Block

As advised in the previous 6th meeting, the detailed exploration (G-1) work at 400m grid pattern for Palayamkottai block covering an area of 32 sq km in District- Cuddalore , Tamil Nadu was presented with proposed borehole location plan along with the location of different lignite blocks in Neyveli, Mannargudi and Ramnad Lignite fields. The proposal was evaluated by the Technical Committee that recommended the following works Component for (Quantum of Table is Annexed)

a) The survey works should include triangulation, levelling, contouring and preparation of topographical map at 1m contour interval in 1:10000/5000 scale under single Component .

b) The survey works should include triangulation, levelling, contouring and preparation of topographical map at 1m contour interval in 1:10000/5000 scale under single component.

c) Geological mapping for the proposed areas need not to be taken up.

d) The depth of the proposed boreholes should be restricted within 12 mts. after intersecting the last established lignite seams in this block.

e) Lignite samples are to be analysed as per ISP norms.

f) Physico-mechanical test to be conducted for one bore in the block.

As advised in the 6th meeting, the Veeranam block covering an area of 150 sq. km for the could be divided into four blocks for exploration purpose.(Quantum of Work Table is Annexed).

**The meeting ended with vote of thanks.**

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**(Dr. Joyesh Bagchi)**
**Director (MoM) &**
**Member Technical Committee, NMET**

**(Shri Lalit Khasdeo, Sr Geologist)**
**Representing P. Tarafdar)**
**Director, GSI &**
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**(Shri S. K. Thakur)**
**GM- Exploration &**
**Member Secretary Technical**
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**(Dr. P.R. Golani)**
**Dy. Director General**
**Geological Survey of India &**
**Chairman Technical Committee of NMET**

ANNEXURE

| 1- Proposed Quantum of Work for Copper, Gold & Moybdenum in Karoli-Nathdwara Area, (Block ID-WR-RAJ-9) in an area of 148 sq. km. District:- Udaipur & Rajsamand, (Rajasthan) | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Geological Mapping** (on 1:12500 Scale) | Sq. Km | 148sq km |
| | **Topographical Survey** ( on 1:12500 Scale in Potential Zone Area) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | RL & Coordinate Determination | Nos | 5 N0s |
| 2 | **Geochemical Sampling** | | |
| | a) Bed rock sampling | Nos. | 100 Nos* |
| | b) Soil Sampling | Nos. | 100 Nos |
| 3 | **Geophysical Survey** | | |
| | a) Magnetic Survey | No of Stan. | 1530 N0s |
| | b) Self Potential | No of Stan. | 1530 Nos |
| | c) Resistivity | Line Km | 60 Line Km |
| | d) Induced Polarisation | Line Km. | 60 Line Km |
| 4 | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting) | Cu. m. | 150 Cu m |
| 5 | **Drilling (coring)** | **m** | **600m (5 Bhs)** |
| 6 | **Geological work** | | |
| | a) Geological Core Logging | m | 600m (5 Bhs.) |
| 7 | **Laboratory Studies** | | |
| | I) Surface Sampling (Primary samples) | | |
| | a) Bed Rock samples ( Cu, Mo, Co, Ni & Se ) | Nos | 100 Nos |
| | b) Au & Ag by Fire Assay | Nos | 100N0s |
| | ii) Soil Samples | | |
| | a) for five radicals Cu, Mo, Co, Ni & Se | Nos | 100 Nos |
| | b) for Au & Ag by fire Assay | Nos | 100 Nos |
| | iii) Check Samples (Bed Rock / Soil/ Stream sediment) | | |
| | a) For five radicals (Cu, Mo, Co, Ni & Se | N0s | 20 N0s |
| | b) For Au & Ag by Fire Assay | Nos | 20 Nos |
| | iv) Pit & Trench Primary & Check Samples | | |
| | a) For (Cu, Mo, Co, Ni & Se) | N0s | 150 N0 |
| | b) For Au & Ag by Fire Assay | Nos | 50 Nos |
| | v) Drill Core Primary Samples | | |
| | a) for 5 radicals ( Cu, Mo, Se & Co) | N0s | 275 Nos |
| | b) For Au & Ag by Fire Assay | Nos | 20 Nos |
| | vi) Composite Samples for 5 radicals | | |
| | a) (Cu, Co, Mo,& Ni ) | N0s | 15 N0s |
| | b) For Au & Ag by Fire Assay | Nos | 15 Nos |
| 8 | **Physical Studies** | | |
| | a) XRD – Studies on Composite samples | Nos. | 10 Nos |
| | b) Trace Element Studies by ICPMS Method for full spectrum of 48 radicals or spectroscopic Studies (12 elements Cd, Sn, W, Sb, Mo, Ce, Nb, Ba, La, Bi, Co & Ni ) | Nos. | 10 Nos |
| 9 | **Petrological Samples (Surface & Bh Core Samples)** | | |

| | | | |
|---|---|---|---|
| | a) Preparation of Thin Section<br>b) Study of Thin Section | N0s<br>N0s | 50 Nos<br>50Nos |
| 10 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section<br>b) Study of Polished Section | N0s<br>N0s | 20 Nos<br>20 Nos |
| 11 | **Whole Rock Analysis** ($SiO_2$, $Al_2O_3$, $Fe_2O_3$, $TiO_2$, MnO, CaO, $Na_2O$, $K_2O+H_2O$, MgO, $P_2O_5$, $CO_2$, & S) | Nos | 10 Nos |
| 12 | **Specific gravity Determination** | Nos. | 20 Nos |
| 13 | **Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015]** | **N0s** | **1** |
| **Note** | *** As per point a)** | | |

| 2. Proposed Quantum of Work for Basemetals in Iswal- Selu- Kathar-Tula (Thala) area (Block ID RAJ-14) in 95 Sq. Km Area District: Udaipur, Rajsamand, (Rajasthan) | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Geological Mapping** (on 1:12500 Scale) | Sq. Km | 95 sq km |
| | **Topographical Survey** (on 1: 12500 Scale in potential zone areas) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | RL & Coordinate Determination | Nos | 5 N0s |
| 2 | **Geochemical Sampling** | | |
| | a) Bed rock sampling | Nos. | 100 Nos |
| | b) Soil Sampling | Nos. | 100 Nos * |
| | c) Stream Sediment Sampling | Nos. | 100 Nos* |
| 4 | **Surface Geophysical Survey** | | |
| | a) Gravity Survey | No of Sts. | |
| | b) Magnetic Survey | No of Sts. | 1020 N0s |
| | c) Self Potential | No of Sts. | 1020 N0s |
| | d) Resistivity | Line Km | 60 Line Km |
| | e) Induced Polarisation | Line Km. | 20 Line Km |
| 5 | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting in Potential Zone Areas) | Cu. m. | 100 Cu m |
| 5 | **Drilling (coring)** | **m** | **600m (5 Bhs)** |
| 6 | **Geological work** | | |
| | **a)** Geological Core Logging | m | 600m (5 Bhs.) |
| 7 | **Laboratory Studies** | | |
| | Surface Sampling (Primary samples) | | |
| | I) Bed Rock samples | | |
| | a) For five radicals (Cu, Pb, Zn, Co & NI) | Nos | 100 Nos |
| | ii) Soil Samples | | |
| | For 5 radicals Cu, Pb, Zn, Co & Ni | Nos | 100 Nos |
| | iii ) Stream Sediment Samples | | |
| | For 5 radicals Cu, Pb, Zn, Co & Ni | Nos. | 100 Nos. |
| | iv) Check Samples (Bed Rock / Soil/ Stream sediment) | | |
| | ( For 3 radicals Cu, Pb & Zn) | N0s | 20 Nos |
| | v) Pit & Trench Primary & Check Samples | | |
| | a) For five radicals (Cu, Pb, Zn, Co & NI) | N0s | 100 Nos |
| | v) Drill Core Primary ,Primary & Check Samples | | |
| | a) For 5 radicals Cu, Pb, Zn, Co & Ni | N0s | 220 Nos |
| | vi) Composite Samples for 7 radicals | | |
| | a) For (Cu, Pb, Zn Co, Ni, Se & Mo ) | N0s | 15 N0s |
| | b) For Au & Ag by Fire Assay | Nos | 15 Nos |
| 8 | **Physical Studies** | | |
| | a) XRD – Studies on Composite samples | Nos. | 10 Nos |
| | b) Trace Element Studies through La –MC-ICP-MS Method for full spectrum of 48 elements or Spectroscopic studies. | Nos. | 15 Nos |
| 9 | **Petrological Samples (Surface & Bh Core Samples)** | | |
| | a) Preparation of Thin Section | N0s | 60 Nos |
| | b) Study of Thin Section | N0s | 60Nos |
| 10 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section | N0s | 30 Nos |
| | b) Study of Polished Section | N0s | 30 Nos |

| | | | |
|---|---|---|---|
| 11 | Whole Rock Analysis | Nos | 10 Nos |
| 12 | Specific gravity Determination | Nos. | 20 Nos |
| 13 | Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015] | N0s | 1 |
| Note | * As per point b) in minutes | | |

| 3. Proposed Quantum of Work for Basemetals & Gold in Vasu-Jagat-Kharwach & Saran-Bharwawat area, (Block ID-WR-RAJ-21) in 124 Sq Km Area, District: Udaipur, (Rajasthan) | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Remote Sensing and Structural Mapping** - to delineate the Litho-contacts and Lineaments and other structural features | Scene | 1 scene study (Area 124 Sq Km) |
| 2 | **Geological Mapping** (on 1:12500 Scale) | Sq. Km | 124 sq km |
| | **Topographical Survey** (on 1:12500 Scale in Potential Zone Areas ) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | RL & Coordinate Determination | Nos | 5 Nos |
| 3 | **Geochemical Sampling** | | |
| | a) Bed rock sampling | Nos. | 100 Nos |
| | b) Soil Sampling | Nos. | 150 Nos |
| | c) Stream Sediment Sampling | Nos. | 50 Nos |
| 4 | **Surface Geophysical** Survey ( * Will be carried out after Interpretation of Aero-geophysical Survey & Geological Mapping) | | |
| | a) Magnetic Survey | No of Stan. | 1020 Nos |
| | b) Self Potential | No of Stan. | 1020 Nos |
| | c) Resistivity | Line Km | 20 Line Km |
| | d) Induced Polarisation | Line Km. | 20 Line Km |
| 5 | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting in Potential Zone Areas) | Cu. m. | 100 Cu m |
| 6 | **Drilling (coring)** | **m** | **600m (5 Bhs)** |
| 7 | **Geological work** | | |
| | a) Geological Core Logging | m | 600m (5 Bhs.) |
| 8 | **Laboratory Studies** | | |
| | **I) Surface Sampling (Primary samples)** | | |
| | i) Bed Rock samples | | |
| | a) For three radicals (Cu, Pb& Zn ) | Nos | 100 Nos |
| | b) For Au & Ag by fire Assay | Nos | 50 Nos |
| | ii) Soil Samples | | |
| | a) For 3 radicals Cu, Pb & Zn | Nos | 100 Nos |
| | b) For Au & Ag by fire Assay | Nos | 50 Nos |
| | ii) Stream Sediment Samples | | |
| | a) For 3 radicals Cu, Pb & Zn | Nos. | 100 Nos. |
| | b) For Au & Ag by fire Assay | Nos. | 50 Nos |
| | iv) Check Samples (Bed Rock / Soil/ Stream sediment) | | |
| | a) For 3 radicals Cu, Pb & Zn | Nos | 20 Nos |
| | b) For Au & Ag by fire Assay | Nos | 20 Nos |
| | v) Pit & Trench Primary & Check Samples | | |
| | a) For 3 radicals Cu, Pb & Zn | NOs | 100 No |
| | b) For Au & Ag by Fire Assay | Nos | 30 Nos |
| | vi) Drill Core Primary Samples | | |
| | a) For 3 radicals Cu, Pb & Zn | Nos | 220 Nos |
| | b) For Au & Ag by fire Assay | Nos | 30 Nos |
| | vii) Composite Samples for 5 radicals | | |
| | c) (Cu, Pb, Zn Co & Ni ) | Nos | 15 NOs |
| | d) For Au & Ag by Fire Assay | Nos | 15 Nos |

| | | | |
|---|---|---|---|
| | viii) Analysis for Barite | | |
| | | | |
| 9 | **Physical Studies** | | |
| | a) XRD – Studies on Composite samples | Nos. | 10 Nos |
| | b) Trace Elements studies by ICP-MS method for full spectrum of 48 elements. / Spectroscopic Studies / (12 elements Cd, Sn, W, Sb, Mo, Ce, Nb, Ba, La, Bi, Co & Ni ) | Nos. | 15 Nos |
| 10 | **Petrological Samples (Surface & Bh Core Samples)** | | |
| | a) Preparation of Thin Section<br>b) Study of Thin Section | NOs<br>NOs | 60 Nos<br>60Nos |
| 11 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section<br>b) Study of Polished Section | NOs<br>NOs | 30 Nos<br>30 Nos |
| 12 | **Whole Rock Analysis** ($SiO_2$, $Al_2O_3$, $Fe_2O_3$, $TiO_2$, MnO, CaO, $Na_2O$, $K_2O$+$H_2O$, MgO, $P_2O_5$, $CO_2$, & S) | Nos | 10 Nos |
| 13 | **Specific gravity Determination** | Nos. | 20 Nos |
| 14 | **Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015]** | **NOs** | 1 |

| 4 - Proposed Quantum Of Work for Fe, Ni, Cr, PGE & Au in Dhanoli Bazar Block, (Block ID: CR-MH-02) in an Area of 160 sq. km. District: Sindhudurg, (Maharashtra) | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Geological Mapping** (on 1:12500 Scale) | Sq. Km | 160 sq.km |
| | **Topographical Survey** (on 1:12500 Scale in Potential Zone Area) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | RL & Coordinate Determination | Nos | 5 N0s |
| 2 | **Geochemical Sampling** | | |
| | a) Soil Sampling | N0s. | 50 N0s |
| 3 | **Surface Geophysical Survey** | | |
| | a) Gravity Survey & Magnetic Survey | No of Stan. | 1530 N0s |
| | b) Self Potential | No of Stan. | 1530 N0s |
| | c) Resistivity | Line Km | 30 Line Km |
| | d) Induced Polarisation Survey | Line Km | 30 Line Km |
| 4. | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting in Potential Zone Areas) | Cu. m. | 100 Cu m |
| 5 | **Drilling (coring)** | **m** | **600m (5 Bhs)** |
| 6 | **Geological work** | | |
| | a) Geological Core Logging | m | 600m (5 Bhs.) |
| 7 | **Laboratory Studies** | | |
| | **A) Surface Sampling (Primary samples)** | | |
| | i) ) Soil Samples | | |
| | a) For (Pt, Pd, Ir, Ru, Rh and Os) | Nos. | 50 Nos. |
| | b) For Au & Ag by Fire Assay | Nos | 50 Nos |
| | ii) Check Samples ( Soil) | | |
| | a) Fe, $SiO_2$, $Al_2O_3$, P, LOI | Nos | 10 Nos |
| | b) For PGE | Nos | 10 Nos |
| | c) for Cr | Nos | 10 Nos |
| | d) For Au & Ag by Fire Assay | Nos | 10 Nos |
| | iii) Pit & Trench Primary & Check Samples | | |
| | a) for 5 radicals Fe, $SiO_2$, $Al_2O_3$, P, LOI | Nos | 100 Nos |
| | b) For Au & Ag by Fire Assay | Nos | 20 Nos |
| | b) PGE (Pt, Pd, Ir, Ru, Rh and Os) | Nos | 25 Nos |
| | d) For Cr | Nos | 25 Nos |
| | iv) Drill Core Primary & Check Samples | | |
| | a) for 5 radicals Fe, $SiO_2$, $Al_2O_3$, P, LOI | Nos | 90 (80+10)Nos |
| | b) For Au & Ag by Fire Assay | Nos | 90 (80+10)Nos 130 |
| | b) PGE (Pt, Pd, Ir, Ru, Rh and Os) | Nos | (120 +10)(Nos |
| | d) For Cr | Nos | 130 (120 +10) Nos |
| | v) Composite Samples for 5 radicals | | |
| | a) for Fe, $SiO_2$, $Al_2O_3$, P, LOI | Nos | 10 N0s |
| | b) PGE (Pt, Pd, Ir, Ru, Rh and Os) | Nos | 10 Nos |
| | c) Au & Ag (By Fire Assay) | Nos | 10 Nos |
| | d) For Cr | Nos | 10 Nos |

| | | | |
|---|---|---|---|
| 8 | **Physical Studies** | | |
| | a) XRD – Studies on Composite samples | Nos. | 10 Nos |
| | b) Trace Element Studies by ICPMS Studies for full spectrum of 48 elements | Nos. | 15 Nos |
| 9 | **Petrological Samples (Surface & Bh Core Samples)** | | |
| | a) Preparation of Thin Section<br>b) Study of Thin Section | Nos<br>Nos | 40 Nos<br>40 Nos |
| 10 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section<br>b) Study of Polished Section | N0s<br>N0s | 25 Nos<br>25 Nos |
| 11 | **Whole Rock Analysis** ($SiO_2$, $Al_2O_3$, $Fe_2O_3$, $TiO_2$, MnO, CaO, $Na_2O$, $K_2O+H_2O$, MgO, $P_2O_5$, $CO_2$, & S) | Nos | 10 Nos |
| 12 | **Specific gravity Determination** | Nos. | 20 Nos |
| 13 | **Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015]** | **N0s** | **1** |

| 5- Proposed Quantum of Work for Ba, Au, Pb, Cu, W In Aurala-Sawali Block, (Block ID-CR-MH-03) in an area of 100 sq. km. District: Nanded, (Maharashtra) | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Geological Mapping** (on 1:12500 Scale) | Sq. Km | 100 sq.km |
| | **Topographical Survey** (on 1:12500 Scale in potential zone areas) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | RL & Coordinate Determination | Nos | 5 N0s |
| 2 | **Geochemical Sampling** | | |
| | a) Bed Rock Sampling | N0s. | 100Nos |
| | b) Soil Sampling | N0s. | 100 N0s |
| | c) Stream Sediment Sampling | N0s. | 100 N0s |
| 3 | **Surface Geophysical Survey** (Work will be carried out after geological Mapping) | | |
| | a) Gravity Survey & Magnetic Survey | No of Stan. | 1020 N0s |
| | b) Self Potential | No of Stan. | 1020 N0s |
| | c) Resistivity | Line Km | 20 Line Km |
| | d) Induced Polarisation Survey | Line Km | 20 Line Km |
| 4 | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting in Potential Zone Areas) | Cu. m. | 100 Cu m |
| 5 | **Drilling (coring)** | **m** | **600m (5 Bhs)** |
| | **Geological work** | | |
| 6 | a) Geological Core Logging | m | 600m (5 Bhs.) |
| 7 | **Laboratory Studies** | | |
| | **I) Surface Sampling (Primary samples)** | | |
| | i) Bed Rock samples | | |
| | a) For Fe, $SiO_2$, $Al_2O_3$, P, LOI )<br>b) Au & Ag by Fire Assay | Nos<br>Nos. | 100 Nos<br>30 Nos |
| | ii) Soil Samples | | |
| | a) For (Cu, Pb, Ba & W) | Nos. | 100 Nos. |
| | iii) Stream Sediment Samples | | |
| | a) For (Cu, Pb, Ba & W) | Nos. | 100 Nos |
| | iv) Check Samples (Bed Rock / Soil/ Stream sediment) | | |
| | a) For (Cu, Pb, Ba & W) | Nos | 20 Nos |
| | v) Pit & Trench Primary & Check Samples | | |
| | a) for 4 radicals (Cu, Pb, Ba & W)<br>b) For Au & Ag (By Fire Assay) | Nos<br>Nos | 100Nos<br>25 Nos |
| | vi) Drill Core Primary & Check Samples | | |
| | a) for 4 radicals (Cu, Pb, Ba & W)<br>b) For Au & Ag (By Fire Assay) | Nos<br>Nos | 220Nos<br>30 Nos |
| | vii) Composite Samples for 6 radicals | | |
| | a) for (Cu, Pb, Ba Co, Mo & W)<br>b) For Au & Ag (By Fire Assay) | Nos<br>Nos | 15 N0s<br>15 Nos |
| 8 | **Physical Studies** | | |
| | a) XRD – Studies on Composite samples | Nos. | 10 Nos |
| | b) Trace Element Studies by ICPMS Studies for full | Nos. | 15 Nos |

| | | | |
|---|---|---|---|
| | spectrum of 48 elements | | |
| 9 | **Petrological Samples (Surface & Bh Core Samples)** | | |
| | a) Preparation of Thin Section | Nos | 50 Nos |
| | b) Study of Thin Section | Nos | 50 Nos |
| 10 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section | N0s | 20 Nos |
| | b) Study of Polished Section | N0s | 20 Nos |
| 11 | **Whole Rock Analysis** ($SiO_2$, $Al_2O_3$, $Fe_2O_3$, $TiO_2$, MnO, CaO, $Na_2O$, $K_2O+H_2O$, MgO, $P_2O_5$, $CO_2$, & S) | Nos | 10 Nos |
| 12 | **Specific gravity Determination** | Nos. | 10 Nos |
| 13 | **Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015]** | **N0s** | **1** |

| 6- PROPOSED QUANTUM OF WORK IN PATHRI-SAOLI AREA (BLOCK- ID CR-MH-04) IN AN AREA OF 100 SQ.KM, DISTRICT- CHANDRAPUR, MAHARASHTRA | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Geological Mapping** (on 1:12500 Scale) | Sq. Km | 100 sq km |
| | **Topographical Survey** (on 1:12500 Scale in the Potential Zone Area ) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | RL & Coordinate Determination | Nos | 5 N0s |
| 2 | **Geochemical Sampling** | | |
| | a) Bed Rock Sampling | N0s. | 50Nos |
| | b) Soil Sampling | N0s. | 50 N0s |
| 3 | **Surface Geophysical Survey** (Work will be carried out after Geological Map Compilation) | | |
| | a) Gravity Survey & Magnetic Survey | No of Sts. | 1020 N0s |
| | b) Self Potential | No of Sts | 1020 N0s |
| | c) Resistivity | Line Km | 20 Line Km |
| | d) Induced Polarisation Survey | Line Km | 20 Line Km |
| 4 | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting in Potential Zone Areas) | Cu. m | 100 Cu m |
| 5 | **Drilling (coring)** | **m** | **600m (5 Bhs.)** |
| 6 | **Geological work** | | |
| | a) Geological Core Logging | m | 600m (5 Bhs.) |
| 7 | **Laboratory Studies** | | |
| | **Surface Sampling (Primary samples )** | | |
| | i) Bed Rock samples | **Nos** | |
| | a) For (Pt, Pd, Ir, Rh, Os, Ru & Cr) | Nos | 50 Nos |
| | ii) Soil Samples | | |
| | a) For (Pt, Pd, Ir, Rh, Os, Ru & Cr) | Nos. | 50 Nos. |
| | iii) Check Samples (Bed Rock / Soil) | | |
| | a) For (Pt, Pd, Ir, Rh, Os, Ru & Cr) | Nos | 10 Nos |
| | iv) Pit & Trench Primary & Check Samples | | |
| | a) For (Pt, Pd, Ir, Rh, Os, Ru & Cr) | Nos | 100 Nos |
| | v) Drill Core Primary Samples | | |
| | a) For 7 radicals (Pt, Pd, Ir, Rh, Os, Ru & Cr) | Nos | 165 Nos |
| | vi) Composite Samples | | |
| | a) For 7 radicals (Pt, Pd, Ir, Rh, Os, Ru & Cr) | Nos | 15 Nos |
| 8 | **Physical Studies** | | |
| | a) XRD – Studies | Nos. | 10 Nos |
| | b) Trace Element Studies by ICPMS Studies for the full spectrum of 48 Elements / or Spectroscopic Studies (15 elements) | Nos. | 15 Nos |
| 9 | **Petrological Samples (Surface & Bh Core Samples)** | | |
| | a) Preparation of Thin Section | Nos | 50 Nos |
| | b) Study of Thin Section | Nos | 50 Nos |
| 10 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section | Nos | 50 Nos |

| | | | |
|---|---|---|---|
| | b) Study of Polished Section | Nos | 50 Nos |
| 11 | **Whole Rock Analysis** | | |
| | For ($SiO_2$, $Al_2O_3$, $Fe_2O_3$, $TiO_2$, MnO, CaO, $Na_2O$, $K_2O$+$H_2O$, MgO, $P_2O_5$, $CO_2$, & S) | Nos | 10 Nos |
| 12 | **Specific gravity Determination** | Nos. | 10 Nos |
| 11 | **Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015]** | Nos | 1 |

| Proposed Quantum of Work for Regional Exploration for Mn, Phosphorite and Graphite in Udwara Area, (Block-ID CR-MP-01), in an area of 225 Sq Km, District: Alirajpur, (Madhya Pradesh) | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Geological Mapping** (on 1:12,500 Scale) | Sq. Km | 225 sq.km |
| 2 | **Topographical Survey** (on 1:12,500 Scale in potential Zone Areas) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | RL & Coordinate Determination | Nos | 5 NOs |
| 3 | **Geochemical Sampling** (Taken up in Anomalous areas) | | |
| | a) Bed Rock Sampling | NOs. | 130 NOs (100 Mn & Phosphorite +30 for Graphite) |
| | b) Soil Sampling | NOs. | 100 NO |
| | c) Stream Sediment Sampling | NOs. | 150 NO. |
| 4 | **Ground Geophysical Survey** (Work to be carried out after completion of Geological Mapping) | | |
| | a) Gravity Survey | No of Sts. | 4410 NOs |
| | b) Magnetic Survey | No of Sts. | 4410 NOs |
| | c) Self Potential Survey | No of Sts. | 4410 NOs |
| 5 | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting) | Cu. m. | 200 Cu m |
| 6 | **Drilling (coring)** | m | 600m (5 Bhs) |
| 7 | **Geological work** | | |
| | a) Geological Core Logging, Sample Preparation etc. | m | 600m (5 Bhs.) |
| 9 | **Laboratory Studies** | | |
| | I) Surface Sampling (Primary samples) | | |
| | i) Bed Rock samples | | |
| | a) i) For (Mn, Fe, $SiO_2$, $Al_2O_3$, & LOI)<br>ii) For $P_2O_5$ | Nos<br>Nos | 100 Nos<br>100 Nos |
| | b) (i) For FC, VM, ASH<br>(ii) For Sulphur<br>(iii) For Moisture | Nos<br>Nos<br>Nos | 30 Nos<br>30 Nos<br>30 Nos |
| | ii) Soil Samples | | |
| | a) For (Mn, Fe, $SiO_2$, $Al_2O_3$, & LOI)<br>b) For $P_2O_5$ | Nos.<br>Nos | 100 Nos<br>100 Nos |
| | iii) Stream Sediment Samples | | |
| | a) For (Mn, Fe, $SiO_2$, $Al_2O_3$ & LOI)<br>b) For $P_2O_5$ | Nos.<br>Nos | 150 NOs<br>150 NOs |
| | iv) Check Samples (Bed Rock / Soil/ Stream sediment) | | |
| | a) i) For (Mn, Fe, $SiO_2$, $Al_2O_3$ & LOI)<br>ii) For $P_2O_5$ | Nos<br>Nos | 35 NO<br>35 NO |
| | b) (i) For FC, VM, ASH<br>(ii) For Sulphur<br>(iii) For Moisture | Nos<br>Nos<br>Nos | 5 Nos<br>5 Nos<br>5 Nos |
| | v) Pit & Trench Primary & Check Samples | | |
| | a) i) For (Mn, Fe, $SiO_2$, $Al_2O_3$ & LOI) | Nos | 165 Nos |

| | | | |
|---|---|---|---|
| | ii) For $P_2O_5$ | Nos | 165 Nos |
| | b) (i) For FC, VM, ASH | Nos | 60 Nos |
| | (ii) For Sulphur | Nos | 60 Nos |
| | (iii) For Moisture | Nos | 60 Nos |
| | vi) Drill Core Primary Samples | | |
| | a) i) For (Mn, Fe, $SiO_2$, $Al_2O_3$ & LOI) | Nos | 170 Nos |
| | ii) For $P_2O_5$ | Nos | 170 Nos |
| | b) (i) For FC, VM, ASH | Nos | 50 Nos |
| | (ii) For Sulphur | Nos | 50 Nos |
| | (iii) For Moisture | Nos | 50 Nos |
| | vii) Composite Samples | | |
| | a) i) For 6 radicals (Mn, Fe, $SiO_2$, $Al_2O_3$ & LOI) | Nos | 10 Nos |
| | ii) For $P_2O_5$ | Nos | 10 Nos |
| | b) (i) For FC, VM, ASH | Nos | 5 Nos |
| | (ii) For Sulphur | Nos | 5 Nos |
| | (iii) For Moisture | Nos | 5 Nos |
| 10 | **Physical Studies** | | |
| | a) XRD – Studies on Composite samples | Nos. | 10 Nos |
| | b) Spectroscopic Studies (La-MC-ICP MS Method Full Spectrum of 48 radicals) (12 elements Cd, Sn, W, Sb, Mo, Ce, Nb, Ba, La, Bi, Co & Ni ) | Nos. | 15 Nos |
| 11 | **Petrological Samples (Surface & Bh Core Samples)** | | |
| | a) Preparation of Thin Section | Nos | 50 Nos |
| | b) Study of Thin Section | Nos | 50 Nos |
| 12 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section | Nos | 30 Nos |
| | b) Study of Polished Section | Nos | 30 Nos |
| 13 | **Whole Rock Analysis** | | |
| | For $SiO_2$, $Al_2O_3$, $Fe_2O_3$, $TiO_2$, MnO, CaO, $Na_2O$, $K_2O+H_2O$, MgO, $P_2O_5$, $CO_2$, & S. | Nos | 10 Nos |
| 14 | **Specific gravity Determination** | Nos. | 20 Nos |
| 15 | **Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015]** | **Nos** | 1 |

| 8.- Regional Exploration Proposal (G-4 level) for Au, Cu, Pb, Zn, Ni and Co in Ranibennur Block, (Block ID SR-KAR-08) in an area of 463 sq. km., District: Haveri & Davanagere, (Karnataka) | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Remote Sensing ( Structural Mapping) & Reconnaissance Mapping (on 1: 50000 Scale)** | Scene | 1 Scene 463 sq km |
| 2 | **Geological Mapping** (on 1:12,500 Scale) | Sq. Km | 463 sq.km |
| 3 | **Topographical Survey** (on 1:12,500 Scale in potential Zone Areas) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | & Coordinate Determination | Nos | 5 N0s |
| 4 | **Geochemical Sampling** (Will be carried out in anomalous areas) | | |
| | a) Bed Rock Sampling | N0s. | 300 N0s |
| | b) Soil Sampling | N0s. | 200 N0 |
| | c) Stream Sediment Sampling | N0s. | 300 N0. |
| 5 | **Ground Geophysical Survey** (Will be carried out in anomalous areas) | | |
| | a) Magnetic Survey | No of Sts. | 2040 N0s |
| | b) Self Potential | No of Sts. | 2040 N0s |
| | c) Resistivity | Line Km | 40 Line Km |
| | d) Induced Polarisation Survey at an station interval of 25m and line interval of 100m | Line Km | 40 Line Km |
| 6 | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting) | Cu. m. | 300 Cu m |
| 7 | **Drilling (coring)** | **m** | **600m (5 Bhs)** |
| 8 | **Geological work** | | |
| | a) Geological Core Logging, Sample Preparation etc. | m | 600m (5 Bhs.) |
| 9 | **Laboratory Studies** (To be carried out on samples collected from anomalous areas) | | |
| | **I) Surface Sampling (Primary samples)** | | |
| | i) Bed Rock samples | | |
| | a) (Cu, Pb, Zn, Co & Ni)<br>b) Au by Fire Assay | Nos<br>Nos. | 200 Nos<br>100 Nos |
| | ii) ) Soil Samples | | |
| | a) (Cu, Pb, Zn, Co & Ni,)<br>b) For Au By Fire Assay | Nos.<br>Nos | 200 Nos.<br>100 Nos |
| | iii) Stream Sediment Samples | | |
| | a) For (Cu, Pb, Zn, Co & Ni,)<br>b) for Au by Fire Assay | Nos.<br>Nos | 200 N0s<br>200 N0s |
| | iv) Check Samples (Bed Rock / Soil/ Stream sediment) | | |
| | a) For (Cu, Pb, Zn, Co & Ni)<br>b) For Au by Fire Assay | N0s<br>Nos | 50 N0<br>60 Nos |
| | v) Pit & Trench Primary & Check Samples | | |
| | a) For (Cu, Pb, Zn, Co & Ni)<br>b) For Au by Fire Assay | N0s<br>Nos | 300 N0<br>100 Nos |
| | vi) Drill Core Primary Samples | | |

| | | | |
|---|---|---|---|
| | a) For (Cu, Pb, Zn, Co & Ni)<br>b) For Au by Fire Assay | N0s<br>N0s | 200 Nos<br>300 Nos |
| | vii) Composite Samples | | |
| | a) For 5 radicals (Cu, Pb, Zn, Co & Mo)<br>b) Au & Ag (By Fire Assay) | N0s<br>Nos | 20 N0s<br>30 N0s |
| 10 | **Physical Studies**<br>a) XRD – Studies on Composite samples | Nos. | 10 Nos |
| | b) Spectroscopic Studies (La-MC-ICP MS Method Full Spectrum of 48 radicals) (12 elements Cd, Sn, W, Sb, Mo, Ce, Nb, Ba, La, Bi, Co & Ni ) | Nos. | 15 Nos |
| 11 | **Petrological Samples (Surface & Bh Core Samples** | | |
| | a) Preparation of Thin Section<br>b) Study of Thin Section | N0s<br>N0s | 40 Nos<br>40 Nos |
| 12 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section<br>b) Study of Polished Section | N0s<br>N0s | 30 Nos<br>30 Nos |
| 13 | **Whole Rock Analysis -** | | |
| | $SiO_2$, $Al_2O_3$, $Fe_2O_3$, $TiO_2$, MnO, CaO, $Na_2O$, $K_2O+H_2O$, MgO, $P_2O_5$, $CO_2$, & S. | Nos | 10 Nos |
| 14 | **Specific gravity Determination** | Nos. | 20 Nos |
| 15 | **Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015]** | **N0s** | **1** |

| 9. Proposed Quantum of Work for Regional Exploration for Mn, Phosphorite and Graphite in Udwara Area, (Block-ID CR-MP-01), in an area of 225 Sq Km, District: Alirajpur, (Madhya Pradesh) | | | |
|---|---|---|---|
| **Sl. No.** | **Item of work** | **Unit (m)** | **Proposed Quantum of Work** |
| 1 | **Geological Mapping** (on 1:12,500 Scale) | Sq. Km | 225 sq.km |
| 2 | **Topographical Survey** (on 1:12,500 Scale in potential Zone Areas) | Sq. Km | As per requirement |
| | Bore Hole Fixation (Scout Boreholes) | Nos | 5 Nos |
| | RL & Coordinate Determination | Nos | 5 N0s |
| 3 | **Geochemical Sampling** (Taken up in Anomalous areas) | | |
| | a) Bed Rock Sampling | N0s. | 100 N0s |
| | b) Soil Sampling | N0s. | 100 N0 |
| | c) Stream Sediment Sampling | N0s. | 150 N0. |
| 4 | **Ground Geophysical Survey** (Work to be carried out after completion of Geological Mapping) | | |
| | a) Gravity Survey | No of Sts. | 4410 N0s |
| | b) Magnetic Survey | No of Sts. | 4410 N0s |
| | c) Self Potential Survey | No of Sts. | 4410 N0s |
| 5 | **Exploratory Mining** | | |
| | Excavation (Trenching /Pitting) | Cu. m. | 200 Cu m |
| 6 | **Drilling (coring)** | **m** | **600m (5 Bhs)** |
| 7 | **Geological work** | | |
| | a) Geological Core Logging, Sample Preparation etc. | m | 600m (5 Bhs.) |
| 9 | **Laboratory Studies** | | |
| | I) Surface Sampling (Primary samples) | | |
| | i) Bed Rock samples | | |
| | a) For (Mn, Fe, $SiO_2$, $Al_2O_3$,P & LOI) | Nos | 100 Nos |
| | ii) Soil Samples | | |
| | a) For (Mn, Fe, $SiO_2$, $Al_2O_3$,P & LOI) | Nos. | 100 Nos. |
| | iii) Stream Sediment Samples | | |
| | a) For (Mn, Fe, $SiO_2$, $Al_2O_3$,P & LOI) | Nos. | 150 N0s |
| | iv) Check Samples (Bed Rock / Soil/ Stream sediment) | | |
| | a) For (Mn, Fe, $SiO_2$, $Al_2O_3$,P & LOI) | Nos | 35 N0 |
| | v) Pit & Trench Primary & Check Samples | | |
| | a) For (Cu, Pb, Zn, Co & Mo) | Nos | 225 N0 |
| | vi) Drill Core Primary Samples | | |
| | a) For (Mn, Fe, $SiO_2$, $Al_2O_3$,P & LOI) | Nos | 220 Nos |
| | vii) Composite Samples | | |
| | a) For 6 radicals (Mn, Fe, $SiO_2$, $Al_2O_3$,P & LOI) | Nos | 15 N0s |
| 10 | **Physical Studies** | | |
| | a) XRD – Studies on Composite samples | Nos. | 10 Nos |
| | b) Spectroscopic Studies (La-MC-ICP MS Method Full Spectrum of 48 radicals) (12 elements Cd, Sn, W, Sb, Mo, Ce, Nb, Ba, La, Bi, Co & Ni ) | Nos. | 15 Nos |
| 11 | **Petrological Samples (Surface & Bh Core Samples)** | | |

| | | | |
|---|---|---|---|
| | a) Preparation of Thin Section<br>b) Study of Thin Section | Nos<br>Nos | 50 Nos<br>50 Nos |
| 12 | **Mineragraphic Studies (Surface & Bh Core Samples)** | | |
| | a) Preparation of Polished Section<br>b) Study of Polished Section | Nos<br>Nos | 30 Nos<br>30 Nos |
| 13 | **Whole Rock Analysis** | | |
| | For $SiO_2$, $Al_2O_3$, $Fe_2O_3$, $TiO_2$, MnO, CaO, $Na_2O$, $K_2O+H_2O$, MgO, $P_2O_5$, $CO_2$, & S. | Nos | 10 Nos |
| 14 | **Specific gravity Determination** | Nos. | 20 Nos |
| 15 | **Report Preparation [As per Mineral (Evidence of Mineral Contents) Rule-2015]** | **Nos** | 1 |

**CMPDIL Limited**

**NATIONAL MINERAL EXPLORATION TRUST (NMET)**

**NONBIRRA COAL BLOCK - KORBA DISTRICT**

**CHHATTISGARH**

**QUANTUAM OF WORK**

| Sl. No. | Activity | 2016-17 | | 2017-18 | | 2018-19 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|
| | | No. of BH's. | Meterage | No. of BH's. | Meterage | No. of BH's. | Meterage | No. of BH's. | Meterage |
| 1 | Drilling (m) | 26 | 10000 | 32 | 12000 | 26 | 10000 | 84 | 30700 |
| 2 | Geo-physical | 26 | 9410 | 32 | 11580 | 26 | 9410 | 84 | 30700 |
| | Logging (m) | | | | | | | | |
| 3 | Chemical Analysis | 26 | 1400 | 32 | 1650 | 26 | 1400 | 84 | 4450 |
| 4 | Physico-Mechanical Studies | - | - | 1 BH. | 400 | - | - | 1 BH. | 400 |
| 5 | Geological Mapping (Sq.km.) | - | 20.00 (sk.km) | - | 20.00 (sk.km) | - | 19.00 (sk.km) | - | 59.00 (sk.km) |

(NEYVELI LIGNITE CORPORATION LTD)

NATIONAL MINERAL EXPLORATION TRUST (NMET)

VEERANAM LIGNITE BLOCK, DISTRICT - CUDDALORE

TAMIL NADU

Proposed QUANTUAM OF WORK

| Sl. No. | Activity | 2017-18 | | 2018-19 | | 2019-20 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|
| | | No. of BH's. | Meterage | No. of BH's. | Meterage | No. of BH's | Meterage | No. of BH's. | Meterage |
| 1 | Drilling (m) | 160 | 40000 | 160 | 40000 | 130 | 32500 | 450 | 112500 |
| 2 | Geo-physical | 160 | 40000 | 160 | 40000 | 130 | 32500 | 450 | 112500 |
| | Logging (m) | | | | | | | | |
| 3 | Physico-Mechanical Studies | 1 BH. | 200 | 1 BH. | 200 | - | - | 2 BH's. | 400 |
| | | | | | | | | | |
| 4 | Chemical Analysis | BH. Nos. | No. of | BH. Nos. | No. of | BH. Nos. | No. of | BH. Nos. | No. of |
| | - | NO's | samples | NO's. | samples | NO's | samples | NO's. | samples |
| | a)Primary Samples | 160 | 1800 | 160 | 1800 | 130 | 1500 | 450 | 5100 |
| | b)Composite Samples | 160 | 500 | 160 | 500 | 130 | 400 | 450 | 1400 |
| | | | | | | | | | |

| | | | |
|---|---|---|---|
| | (NEYVELI LIGNITE CORPORATION LTD) | | |
| NATIONAL MINERAL EXPLORATION TRUST (NMET) | | | |
| PALAYAMKOTTAI LIGNITE BLOCK - CUDDALORE DISTRICT | | | |
| TAMIL NADU | | | |
| PROPOSED QUANTUAM OF WORK | | | |
| | | | |
| Sl. | Activity | 2017-18 | |
| No. | | No. of BH's. | Meterage |
| 1 | Drilling (m) | 82 | 14500 |
| 2 | Geo-physical | 82 | 14500 |
| | Logging (m) | | |
| 3 | Physico-Mechanical | 1 BH. | 180 |
| | Studies | | |
| 4 | Chemical Analysis | No. of BH's. | No. of Samples |
| | a)Primary Samples | 82 | 900 |
| | b)Composite Samples | 82 | 250 |
| | | | |
| | | | |